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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,427	10/18/2000	George H. Beall	SP00-321	4916

22928 7590 02/24/2003
CORNING INCORPORATED
SP-TI-3-1
CORNING, NY 14831

EXAMINER

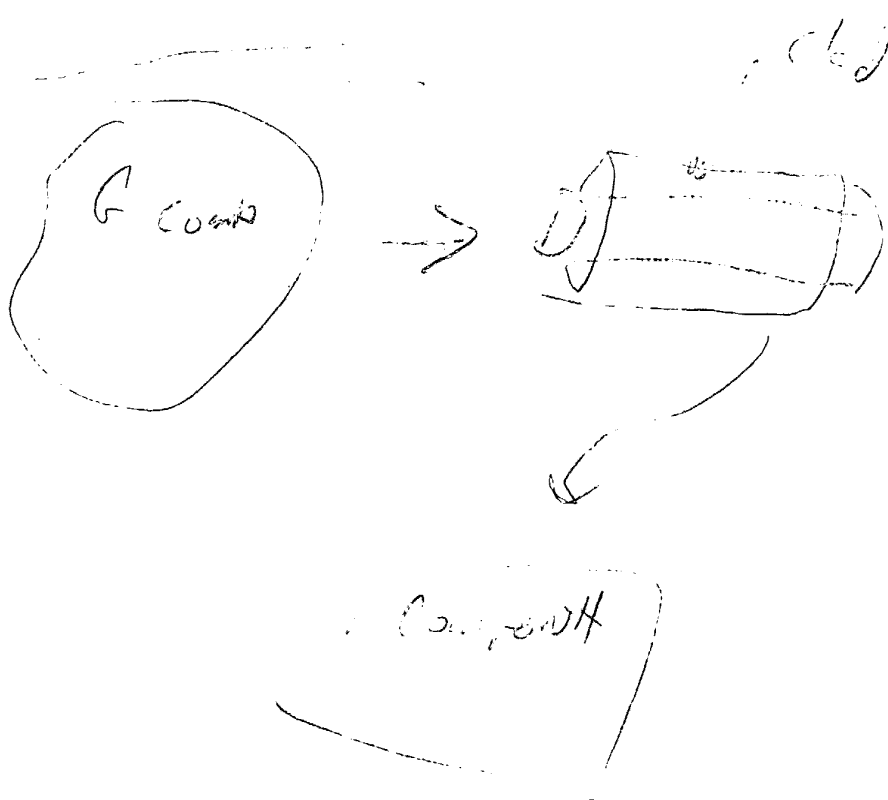
HOFFMANN, JOHN M

ART UNIT PAPER NUMBER

1731

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



Office Action Summary

Application No.

09/691,427

Applicant(s)

BEALL ET AL.

Examiner

John Hoffmann

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 18-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 and 13 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 15 is/are rejected.
- 7) ☒ Claim(s) 10, 11, 13-14, 16-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Claims 18-21 and are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Also, various metals under Markush practice are chosen by Applicant in PAPER #7. The list begins Cr, Ni, Co, Ti, V.... The claims are presently of a form which do not warrant withdrawal of any additional claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi 5244846 in view of Ohara 6197710 and optionally in view of Kingery (Introduction to Ceramics), or Tanaka 5474588 in view of Ohara 6197710 and optionally in view of Kingery (Introduction to Ceramics),

A cursory review of the primary references shows the invention substantially as claimed - except for the devitrification. See the paragraph spanning cols. 5-6 of Onishi and figures 1-2 of Tanaka.

Ohara discloses that such type of fibers can be improved by using a composition that will devitrify, and then devitrifying those fibers. See col. 1, lines 18-35, col. 5, line 10-14; col. 19, line 44, col. 20, line 22-23; and col. 9, line 12-16. Specifically, by devitrifying the material with a rare earth element, one can use a much higher intensity of excitation light. It would have been obvious to modify the Onishi and/or Tanaka methods, so that the fiber is within the Ohara guidelines (such as col. 2, lines 42-60), and then devitrifying the fibers so as to increase their resistance to thermal expansion breakage.

As to the step (d) limitation that the optical component be formed at a temperature above the crystallization temperature; Ohara does not explicitly disclose this. Kingery figure 8.27, page 369 shows that the glass forming occurs at temperatures greater than the crystallization temperature. It is noted that Ohara Tables I-IV disclose melting temperatures around 1500 and crystallization temperatures around 700 C. It would have been obvious to do the glass forming at a temperature where the glass is soft (i.e. near the melting temperature) because glass which is not near the melting temperature is very hard and nearly impossible to change shape. It is further obvious to have the crystallizing step at a temperature well below a deforming temperature - otherwise the glass of the fiber will deform. It is noted that col. 15, line 36 indicates that the crystallization temperature can be up to 30 hours. One of ordinary skill would realize that if the glass is anywhere at a working temperature for 30 hours, the glass object will deform under gravity.

As to the nanocrystals see col. 10, line 42 of Ohara.

AS to claim 2, see col. 9, lines 14-15 of Ohara.

As to claims 3-4 limitation of doping with a plurality of transition metals: See col. 9, lines 34-36 (Ohara) which discloses doping with more than one transition metal ion.

AS to claim 5, lines 14-15 of col 9 of Ohara which discloses using more than one of the lanthanides in a composition.

Claim 6: AS to the nanocrystals see col. 10, line 42 of Ohara. 280 Angstrom is 28 nano meters.

Claim 7 is clearly met.

Claims 8-9 : It is noted that the claims do not require a step of modifying the glass. It is improper to interpret the claims as requiring a step that is not claimed. Therefore the modification is deemed to be a product-by-process limitation. One looking at the glass of the fiber, one cannot tell if the glass was modified by the claimed oxides. Whereas one can tell whether a glass contains a particular oxide - the claims are not limited by a compositional modification. One can modify a glass with an oxide without changing the composition of the glass. For example, claim 8 refers to an oxide of aluminum - which is a common abrasive. A glass object can be modified using aluminum oxide abrasive to polish the glass object - and yet the glass does not have any aluminum oxide in it. One looking at an Ohara fiber, it is impossible to tell if someone had use an oxide material to modify it. As an extreme case: one can flex or straighten a loose fiber with a wooden stick or a GeO₂ stick; such is a modification. One cannot tell what is used to straighten or flex it. The product-by-process limitation -

which limits the product is essentially meaningless because the process is so broad that it need not impart any discernable feature to the glass.

Claim 12: step d) , line 2 is interpreted as "temperature above a crstyalization temperature of the...." Step (e) refers to "the draw clad fiber" (sic) and "the core"; since there is no prior requirement for either of these things, the step is interpreted as referring to "a drawn glass fiber" and "a core".

Claim 15: Onishi does not apply for this rejection. Tanaka does not disclose how the cladding material is made. Col. 1, lines 55-56 discloses that the VAD method is the preferable way to make the fiber. It would have been obvious to use a CVD method (such as VAD) to make the cladding material, because it is a preferable way to make the glass material in the Tanaka process, and because the artisan using the Tanaka process already has the equipment, raw mateiral and knowledge to make glass with a CVD method. It would be much more expensive to invest in additional equipment to make the cladding glass in a non-CVD method.

Allowable Subject Matter

Claims 10-11, 14, 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12-13 are allowed.

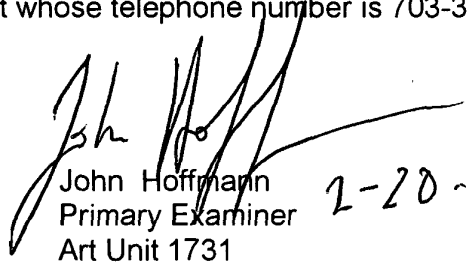
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thigpen, Auzel, Dyott, Borrelli, Bange, Snitzer, Chu, Antos, Worrell, Sakuragi and Okabe are cited as being relevant to Applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is 703-308-0469. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7115 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


John Hoffmann
Primary Examiner
Art Unit 1731 2-20-03

jmh
February 20, 2003